

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

## 19 - EQ - 5.5 Polynomials Review

### Part 1: Multiplying Polynomials

**Q1:** The expression  $(2x - 3)(x + 4)$  simplifies to  $ax^2 + bx - cd$ , where  $a$ ,  $b$ ,  $c$ , and  $d$  are \_\_, \_\_, \_\_, and \_\_.

(Record your **four digit** answer in the Numerical Response boxes below)

2	5	1	2
---	---	---	---

	$2x$	$-3$
$x$	$2x^2$	$-3x$
$+4$	$+8x$	$-12$

$$2x^2 + 5x - 12$$

$$\begin{matrix} a=2 & c=1 \\ b=5 & d=2 \end{matrix}$$

**Q2:** (Long Answer) Simplify the expression  $(x - 3)(x + 4) - (x - 2)^2$  (2 marks)

$$\begin{aligned} & (x-3)(x+4) - (x-2)(x-2) \\ & (x^2 + 4x - 3x - 12) - (x^2 - 2x - 2x + 4) \\ & (x^2 + x - 12) - (x^2 - 4x + 4) \\ & \underline{x^2 + 1x - 12} \quad \underline{-x^2 + 4x - 4} \\ & \underline{\underline{5x - 16}} \end{aligned}$$

5x - 16

### Part 2: Factoring Polynomials

**Q3:** (Long Answer) Factor the following expressions. (3 marks)

$$x^2 - 2x - 15 \quad \begin{matrix} +3 & -5 \\ \square + \square = -2 \\ \square \times \square = -15 \end{matrix}$$



$(x+3)(x-5)$

$$6x^2 - 7x + 2 \quad \begin{matrix} -3 & -4 \\ \square + \square = -7 \\ \square \times \square = 12 \end{matrix}$$



$$\begin{aligned} & 6x^2 - 3x - 4x + 2 \\ & (6x^2 - 3x) + (-4x + 2) \\ & 3x(2x-1) - 2(2x-1) \end{aligned}$$

$(2x-1)(3x-2)$

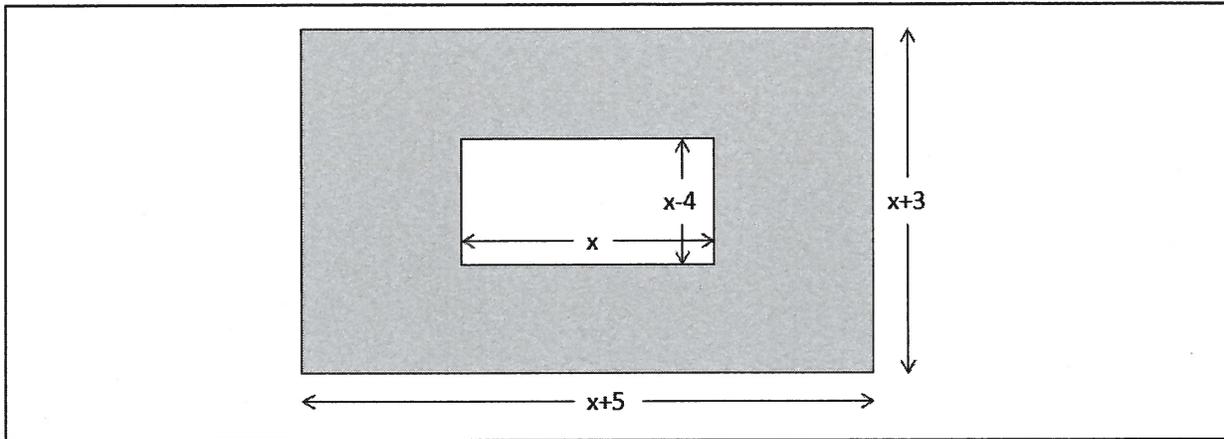
$$-x^2y + 9y$$

$$-y(x^2 - 9)$$

$-y(x+3)(x-3)$

Part 3: Polynomial Word Problems

Use the following information to answer Q4-Q6:



Q4: The perimeter of the larger rectangle is  $ax + bc$ , where  $a$ ,  $b$ , and  $c$  is \_\_, \_\_, and \_\_.

(Record your **three digit** answer in the Numerical Response boxes below)

4	1	6	
---	---	---	--

$$\begin{aligned}
 P &= (L) + (w) + (L) + (w) \\
 P &= (x+5) + (x+3) + (x+5) + (x+3) \\
 P &= 4x + 16 \\
 P &= ax + bc \quad \begin{array}{l} a=4 \\ b=1 \\ c=6 \end{array}
 \end{aligned}$$

Q5: The shaded area, in factored form, is  $a(bx + c)$ , where  $a$ ,  $b$ , and  $c$  are \_\_, \_\_, and \_\_.

(Record your **three digit** answer in the Numerical Response boxes below)

3	4	5	
---	---	---	--

$$\begin{aligned}
 \text{Large rectangle} &= (x+3)(x+5) = x^2 + 8x + 15 \\
 \text{Small rectangle} &= (x)(x-4) = x^2 - 4x
 \end{aligned}$$

$$\begin{aligned}
 \text{Shaded} &= \text{Large} - \text{Small} \\
 &= (x^2 + 8x + 15) - (x^2 - 4x) \\
 &= \underline{x^2} + \underline{8x} + \underline{15} - \underline{x^2} + \underline{4x} \\
 &= 12x + 15 \\
 &= 3(4x + 5) \Rightarrow \begin{array}{l} a=3 \\ b=4 \\ c=5 \end{array}
 \end{aligned}$$

**MARKING:**

Beginning	0.0 – 3.5
Progressing	4.0 – 5.5
Competent	6.0 – 7.5
Exemplary	8.0